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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/652,330	ELZUR ET AL.
	Examiner	Art Unit	
	HIEU T. HOANG	2452	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 July 2009</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>18-21,25 and 33-41</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>18-21,25 and 33-41</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the communication filed on 07/23/2009.

2.   Claims 1-2, 4-17, 26-32 and 42-49 are withdrawn from further consideration as
being non-elected invention.

3.   Claims 18-21, 25, 33-41 are pending.

Response to Amendment

4.   The 35 U.S.C. 112 rejection, second paragraph of claims 20-21 has been
withdrawn due to the amendment.

5.   The 35 U.S.C. 112 rejection, first paragraph of claims 36-41 has been withdrawn.

Response to Arguments

6.   Applicant argues that the prior art does not teach: "a single Ethernet connector".
The examiner respectfully traverses. First, by reciting: "comprising…a single Ethernet
connector," the claim does not exclude the possibility of using more than one Ethernet
connector. Philbrick in fig. 16 and [0066], [0067] and [0106] shows four network
connectors for the purpose of supporting different conduits (such as twisted pair, coaxial
cable or optical fiber), not for supporting each traffic on a different connector.
Furthermore, there is no need for Philbrick's network interface card to have four network
connectors for it to function. If one conduit is used alone, the connector is fully capable
of communicating a plurality of network traffics. For example, Philbrick clearly discloses
that a single L2 SAN connector can run SCSI over TCP/IP (SCSI (first traffic) over

TCP/IP (second traffic using a same protocol stack) (Philbrick, [0065] lines 15-17, also

[0065], SCSI and TCP, or Etherstorage or SEP and TCP, [0069] lines 20-23, different

storage protocols over TCP/IP, [0084], [0085], NAS traffic and network storage traffic

over network line 644, utilizing iSCSI and TCP/NetBios/SMB, [0085], iSCSI and

TCP/NetBios/SMB, fig. 15, [0093], [0097], [0099], fast path audio and video traffics and

real time voice/video traffics and NAS, RTP/RTCP and SIP and MGCP).

7.   Applicant admits that Haviv teaches "an interconnected fabric" coupled to a

plurality of servers and argues that Philbrick-Haviv does not teach a single fabric

(Remarks, p. 15 par 2). The argument is vague. The interconnected fabric is read as the

claimed single fabric.

8.   Applicant argues that iSCSI protocol is one protocol and therefore Philbrick does

not teach an Ethernet controller handling a plurality of traffic types. Satran et al. in draft-

ietf-ips-iscsi-07.txt discloses that (iSCSI) communication between a client (initiator) and

server (target) occurs over one or more TCP connections (1.2.1, par. 1-4). Satran never

states that iSCSI commands (traffic) are unable to be transported across TCP/IP

infrastructure, as argued by applicant (Remarks, p. 16, par. 2) but the opposite; that is

(iSCSI) communication occurs over one or more TCP connections. Therefore, one

skilled in the art would appreciate that layer 4 TCP/IP (described in [0050] by Philbrick)

is inherently supported in an INIC supporting iSCSI traffic, reading on handling a

plurality of traffic types.

        Furthermore, given the broadness of "different types of traffic," any two different

traffics can be read as different types of traffic. Many sections in Philbrick disclose

handling at least two traffics over a same fabric (fig. 14, [0084], [0085], NAS traffic and

network storage traffic over network line 644, utilizing iSCSI and TCP/NetBios/SMB,

[0085], iSCSI and TCP/NetBios/SMB, fig. 15, [0093], [0097], [0099], fast path audio and

video traffics and real time voice/video traffics and NAS, RTP/RTCP and SIP and

MGCP).

9.   In response to arguments of Philbrick's INIC does not process a plurality of

traffics concurrently. In traversal, Philbrick clearly discloses that the server INIC holds 3

CCB's concurrently for distinguishing 3 different types of network traffics, therefore

supporting a chip concurrently process a plurality of traffic types ([0085], 3 CCBs for

different traffic types so that the server INIC can process the traffic types according to

the server protocol stack in fig. 14).

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
>
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
>
> the prior art are such that the subject matter as a whole would have been obvious at the time the
>
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
>
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claims 18, 20, 22-29, 31, 32 and 36-41 are rejected under 35 U.S.C. 102(e) as

being anticipated by Philbrick et al. (US 2001/0037406, hereafter Philbrick), in view of

Haviv (US 2002/0059451)

12.   For claim 18, Philbrick discloses a server, comprising:

- a single integrated convergence network controller chip (fig. 6, fig. 1, network

  interface card INIC 22);

- a single Ethernet connector for handling a plurality of different types of network

  traffic (fig. 16, one of the Ethernet connectors for receiving multiple traffic types,

  [0065], SCSI and TCP, or Etherstorage or SEP and TCP, [0069] lines 20-23,

  different storage protocols over TCP/IP, [0084], [0085], NAS traffic and network

  storage traffic over network line 644, utilizing iSCSI and TCP/NetBios/SMB,

  [0085], iSCSI and TCP/NetBios/SMB, fig. 15, [0093], [0097], [0099], fast path

  audio and video traffics and real time voice/video traffics and NAS, RTP/RTCP

  and SIP and MGCP)),

- the single Ethernet connector is coupled to the single integrated convergent

  network controller chip ([0066] lines 12-15, Ethernet connector 424 coupled to

  the INIC),

- the single integrated convergence network controller chip is operable to

  concurrently process the plurality of different types of traffic ([0065] lines 15-21,

  at least two traffics SCSI and TCP/IP, fig. 14, [0084], [0085], NAS traffic and

  network storage traffic over network line 644, utilizing iSCSI and

TCP/NetBios/SMB, [0085], iSCSI and TCP/NetBios/SMB, fig. 15, [0093], [0097],

[0099], fast path audio and video traffics and real time voice/video traffics and

NAS, RTP/RTCP and SIP and MGCP)).

Philbrick does not explicitly disclose different types of network traffic transported

via a single fabric for the plurality of servers; the single fabric is coupled to a plurality of

servers.

However,Haviv discloses different types of network traffic transported via a single

fabric for the plurality of servers; the single fabric is coupled to a plurality of servers (fig.

5, [0014], [0019], [0022], [0044], servers 54 and a single fabric connecting to servers for

transporting different traffic types, RDMA over TCP/IP, SAN, SCSI RDMA, socket direct

protocol... for the servers)

It would have been obvious for one skilled in the art at the time of the invention to

combine the teachings of Philbrick and Haviv to utilize a single chip for processing

multiple traffic types for a plurality of servers via a single fabric in order to reduce usage

of hardware and/or network resources and costs.

13.   For claim 20, Philbrick-Haviv further discloses the blade server has a single

Internet protocol (IP) address (Philbrick, [0053] IP address).

14.   For claim 21, Philbrick-Haviv further discloses the plurality of servers is part of a

data center (Philbrick, fig. 14, storage center), and the data center comprises a plurality

of other servers coupled to each other via the single fabric (Haviv, fig. 5).

15.   For claim 25, Philbrick-Haviv further discloses the plurality of different types of

traffic comprises at least two of network traffic, storage traffic, interprocess

communication (IPC) traffic and cluster traffic (Philbrick, [0065] lines 15-21, network

traffic TCP/IP and storage traffic SCSI, Haviv, [0019]).

16.   For claim 36, Philbrick discloses a system for communication, the system

comprising: a single integrated convergent network controller chip that enables

concurrent hardware, firmware and software processing functionalities of a plurality of

different types of traffic that are received via a single layer 2 (L2) connector (fig. 6,

[0065] lines 15-21, a single integrated network controller INIC 400 with a single L2 SAN

connector for at least two traffics (SCSI and TCP/IP traffics), fig. 14, [0084], [0085], NAS

traffic and network storage traffic over network line 644, utilizing iSCSI and

TCP/NetBios/SMB, [0085], iSCSI and TCP/NetBios/SMB, fig. 15, [0093], [0097], [0099],

fast path audio and video traffics and real time voice/video traffics and NAS, RTP/RTCP

and SIP and MGCP, fig. 13, protocol processing using the INIC is hardware and

driver—software/firmware)

        Philbrick does not explicitly disclose the connector is communicatively coupled to

a plurality of servers via a single fabric.

        However,Haviv discloses transporting different types of network traffic

transported via a single fabric for the plurality of servers (fig. 5, [0014], [0019], [0022],

[0044], servers 54 and a single fabric connecting to servers for transporting different

traffic types, RDMA over TCP/IP, SAN, SCSI RDMA, socket direct protocol… for the

servers)

It would have been obvious for one skilled in the art at the time of the invention to

combine the teachings of Philbrick and Haviv to utilize a single chip for processing

multiple traffic types for a plurality of servers via a single fabric in order to reduce usage

of hardware and/or network resources and costs.

17.   For claim 37, Philbrick-Haviv discloses said single integrated convergent network

controller chip comprises a layer 2 network interface card (L2 NIC) (Philbrick, [0065]

lines 7-11, Ethernet, fig. 24, MAC controller), a transmission control protocol (TCP)

processor, an iSCSI processor ([0065] lines 15-21, iSCSI processing over TCP/IP) and

a remote direct memory access (RDMA) processor (fig. 25, DMA controller), and a

Management Agent processor ([0106], last sentence).

18.   For claim 38, Philbrick-Haviv discloses said plurality of different types of network

traffic comprises at least two of a network traffic, storage traffic, interprocess

communication (IPC) traffic and cluster traffic (Philbrick, fig. 6, [0065] lines 15-21, a

single L2 SAN connector in an INIC (integrated circuit) for both storage SCSI traffic and

network TCP/IP traffic).

19.   For claims 39-41, the claims are rejected for the same rationale as in claims 36-

38 respectively.

20.   Claims 33-35, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Philbrick, and further in view of Microsoft (03/03/2001, Winsock Direct and Protocol

Offload on SANs).

21.   For claim 33, Philbrick discloses a method for communication, the method

comprising:

in a data center, accessing a storage system over a single fabric, wherein said

single fabric comprises a single layer 2 (L2) connector coupled to a single integrated

convergent network controller chip that is enabled to concurrently process a plurality of

different types of traffic (fig. 6, L2 connector coupled to the INIC-- integrated convergent

network controller chip, [0065] lines 15-21, single L2 connector for network traffic

TCP/IP and storage traffic SCSI, fig. 14, [0084], [0085], NAS traffic and network storage

traffic over network line 644, utilizing iSCSI and TCP/NetBios/SMB, [0085], iSCSI and

TCP/NetBios/SMB, fig. 15, [0093], [0097], [0099], fast path audio and video traffics and

real time voice/video traffics and NAS, RTP/RTCP and SIP and MGCP); and

accessing a network over the single fabric ([0065] lines 15-21, network traffic TCP/IP

and storage traffic SCSI).

Philbrick does not explicitly disclose accessing a cluster over the single fabric.

However, Microsoft discloses accessing a cluster over the single fabric (fig. 2,

page 5 lines 7-8, RDMA support for clustering traffic, RDMA running over TCP/IP).

Therefore, it would have been obvious for one skilled in the art at the time of the

invention to combine the teachings of Philbrick and Microsoft to further provide more

functions such as RDMA support on an iSCSI-enabled NIC of Philbrick.

22.   For claim 34, Philbrick-Microsoft discloses the invention as in claim 33. Philbrick-

Microsoft further discloses said accessing of said storage system over said single fabric

are performed over a single Ethernet connector of a server in the data center (Philbrick,

fig. 6, single Ethernet connector 424).

23.   For claim 35, Philbrick-Microsoft discloses the invention as in claim 33. Philbrick-

Microsoft further discloses said single integrated convergent network controller chip

coupled to the single Ethernet connector has a single Internet protocol (IP) address

(Philbrick, [0053] IP address).

24.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Philbrick-Haviv, in view of what was known in the art.

25.   For claim 19, Philbrick-Haviv does not explicitly disclose the server comprises a

blade server, and wherein the integrated chip is part of a blade mounted in the blade

server.

However, Official notice is taken that it was well known in the art that a blade
server comprises a plurality of servers, and the single integrated convergent network
controller chip is part of a blade mounted in the blade server.

Therefore, it would have been obvious for one skilled in the art at the time of the
invention to apply Philbrick to a blade server system to make use of advantages of a
blade server system such as high space density.

Conclusion

26.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-
1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m.,
EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number
for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Kenny S Lin/

Primary Examiner, Art Unit 2452